

sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{19}$ or S);

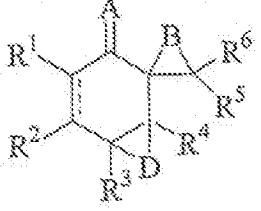
5 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$, and

10 the dotted line indicates the presence of either a single or double bond, wherein the presence of a single bond, the valences are completed by hydrogens.

In a particular embodiment of the present invention, the compounds of the formula (II) are the following species:

A	B	D	R^1	R^2	R^3	R^4	R^5	R^6
O	O	O	Me	H	H	H	Me	Me
O	O	O	i-Pr	H	H	H	Me	Me
O	O	O	Ph	H	H	H	Me	Me
O	O	O	Me	Me	H	H	Me	Me
O	O	O	i-Pr	Me	H	H	Me	Me
O	O	O	Ph	Me	H	H	Me	Me
O	O	O	Me	H	Me	H	Me	Me
O	O	O	i-Pr	H	Me	H	Me	Me

(II)									
A	B	D	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	
O	O	O	Ph	H	Me	H	Me	Me	
O	O	O	Me	H	H	Me	Me	Me	
O	O	O	i-Pr	H	H	Me	Me	Me	
O	O	O	Ph	H	H	Me	Me	Me	
O	O	O	Me	H	CH ₂ Ph	H	Me	Me	
O	O	O	i-Pr	H	CH ₂ Ph	H	Me	Me	
O	O	O	Ph	H	CH ₂ Ph	H	Me	Me	
O	CH ₂	O	Me	H	H	H	Me	Me	
O	CH ₂	O	i-Pr	H	H	H	Me	Me	
O	CH ₂	O	Ph	H	H	H	Me	Me	
O	CH ₂	O	Me	Me	H	H	Me	Me	
O	CH ₂	O	i-Pr	Me	H	H	Me	Me	
O	CH ₂	O	Ph	Me	H	H	Me	Me	
O	CH ₂	O	Me	H	Me	H	Me	Me	
O	CH ₂	O	i-Pr	H	Me	H	Me	Me	
O	CH ₂	O	Ph	H	Me	H	Me	Me	
O	CH ₂	O	Me	H	H	Me	Me	Me	
O	CH ₂	O	i-Pr	H	H	Me	Me	Me	
O	CH ₂	O	Ph	H	H	Me	Me	Me	

 (I)									
A	B	D	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	
O	CH ₂	O	Me	H	CH ₂ Ph	H	Me	Me	
O	CH ₂	O	<i>i</i> -Pr	H	CH ₂ Ph	H	Me	Me	
O	CH ₂	CH ₂	Ph	H	CH ₂ Ph	H	Me	Me	
O	CH ₂	CH ₂	Me	H	H	H	Me	Me	
O	CH ₂	CH ₂	<i>i</i> -Pr	H	H	H	Me	Me	
O	CH ₂	CH ₂	Ph	H	H	H	Me	Me	
O	CH ₂	CH ₂	Me	Me	H	H	Me	Me	
O	CH ₂	CH ₂	<i>i</i> -Pr	Me	H	H	Me	Me	
O	CH ₂	CH ₂	Ph	Me	H	H	Me	Me	
O	CH ₂	CH ₂	Me	H	Me	H	Me	Me	
O	CH ₂	CH ₂	<i>i</i> -Pr	H	Me	H	Me	Me	
O	CH ₂	CH ₂	Ph	H	Me	H	Me	Me	
O	CH ₂	CH ₂	Me	H	H	Me	Me	Me	
O	CH ₂	CH ₂	<i>i</i> -Pr	H	H	Me	Me	Me	
O	CH ₂	CH ₂	Ph	H	H	Me	Me	Me	
O	CH ₂	CH ₂	Me	H	CH ₂ Ph	H	Me	Me	
O	CH ₂	CH ₂	<i>i</i> -Pr	H	CH ₂ Ph	H	Me	Me	
O	CH ₂	CH ₂	Ph	H	CH ₂ Ph	H	Me	Me	

In a sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = O, E = O and D = O.

5 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

10 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}$ and R^{17} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

15 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

20 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = NR^{26} , E = O, D = O.

25 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

30 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}$ and R^{20} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = CR^8R^9, E = O, D = O$.

10 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

15 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}$ and R^{20} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25 $A = O, B = S, E = O, D = O$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

§ R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

10 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O$, $B = O$, $E = S$, $D = O$.

15 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O$, NR^{14} or S).

20 R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

25 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

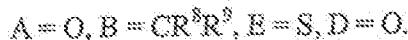
30 $A = O$, $B = NR^{10}$, $E = S$, $D = O$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}$ and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

20 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}$ and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

25 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = S, E = S, D = O.

5 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

10 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹ and R²² independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

15 R¹ and R², R² and R³, R³ and R⁴, R⁴ and R⁵ and R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

20 A = O, B = O, E = CR⁸R⁹, D = O.

25 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹ and R²² independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = NR^{10}, E = CR^8R^9, D = O$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}$ and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

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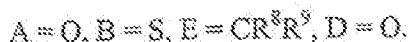
$A = O, B = CR^{21}R^{22}, E = CR^8R^9, D = O$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} and R^{15} and R^{16} and R^{17} and R^{18} and R^{19} and R^{20} and R^{21} and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

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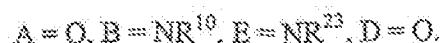


R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} and R^{15} and R^{16} and R^{17} and R^{18} and R^{19} and R^{20} and R^{21} and R^{22} independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = CR^8R^9, E = NR^{10}, D = O.$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

30 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5 A = O, B = S, E = NR¹⁰, D = O.

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

10 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

15 R¹ and R², R² and R³, R³ and R⁴, R⁴ and R⁵ and R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

20 A = O, B = O, E = NR¹⁰, D = O.

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

25 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} and R^{15} and R^{16} and R^{17} and R^{18} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = CR^8R^9, E = NR^{10}, D = O$.

10 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

15 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamoryl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} and R^{15} and R^{16} and R^{17} and R^{18} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25 $A = CR^8R^9, B = O, E = O, D = O$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^2R^2, B = NR^{10}, E = O, D = O.$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, aryalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = CR^{20}R^{21}, E = O, D = O,$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = S, E = O, D = O.$$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

30 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = O, E = S, D = O.$$

5 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

10 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

15 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{13}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{13}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = NR^{10}, E = S, D = O.$$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

5 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = CR^{20}R^{21}, E = S, D = O.$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

10 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azido, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

15 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

20 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

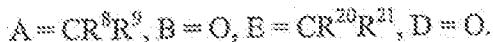
$$A = CR^8R^9, B = S, E = S, D = O.$$

25 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

5 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

10 R¹ and R², R³ and R⁴, R⁵ and R⁶, R⁷ and R⁸ and R⁹ and R¹⁰ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

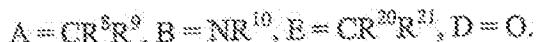


15 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

20 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

25 R¹ and R², R³ and R⁴, R⁵ and R⁶, R⁷ and R⁸ and R⁹ and R¹⁰ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

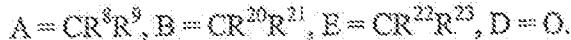


R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^3 and R^4, R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

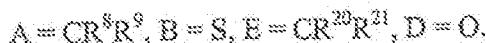


20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

30 R^1 and R^2, R^3 and R^4, R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

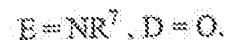
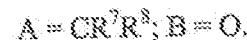
In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



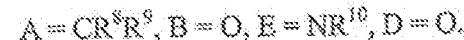
R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.



In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



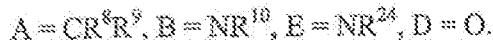
R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{13}R^{14}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

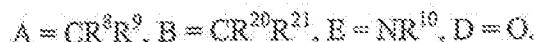


10 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

15 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

25 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



30 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkanyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = S, E = NR^{10}, D = O,$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{13}R^{14}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{18}-CR^{16}$, $CR^{15}R^{16}O$ or $CR^{13}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = Q, B = O, C = O, D = CR^T R^T.$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given whersin the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

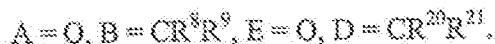
$A = O, B = NR^{10}, E = O, D = CR^8R^9.$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

30 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

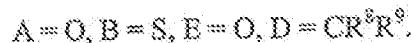


R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{12}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfuryl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

5

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = O, E = S, D = CR^8R^9$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

10

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkaryl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

15

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

20

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25

$A = O, B = NR^{10}, E = S, D = CR^8R^9$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

5 $R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

30 $A = O, B = CR^8R^9, E = S, D = CR^{20}R^{21}.$

15 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

20 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

25 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

30 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = S, E = S, D = CR^8R^9.$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^3 and R^4, R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given whersin the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

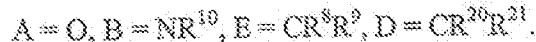
$$A = O, B = O, C = CR^8R^9, D = CR^{26}R^{21}.$$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

30 R^1 and R^2, R^3 and R^4, R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

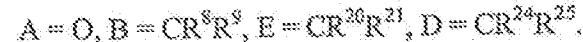


R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2, R^3 and R^4, R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5. R^1 and R^2 , R^3 and R^4 , R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = S, E = CR^8R^9, D = CR^{20}R^{21}$.

10. R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

15. $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20. R^1 and R^2 , R^3 and R^4 , R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25. $A = O, B = O, E = NR^{16}, D = CR^8R^9$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = Q, B = NR^{10}, C = NR^{23}, D = CR^8R^9.$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

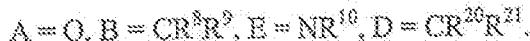
R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

$$A = Q, B = CR^2R^{-1}$$

$$E = NR^2, D = CR^2R^2$$

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

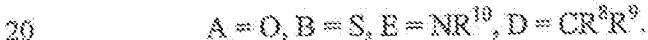


5 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

10 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

15 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:



20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

5

$A = CR^7R^8$, $B = O$.

$E = O$, $D = CR^7R^8$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10

$A = CR^8R^9$, $B = O$, $E = O$, $D = CR^{20}R^{21}$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

15

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

25

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^8R^9$, $B = NR^{10}$, $E = O$, $D = CR^{20}R^{21}$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkanyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^8R^9, B = CR^{20}R^{21}, E = O, D = CR^{24}R^{25}$.

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^6R^9, B = S, E = O, D = CR^{20}R^{21}.$$

*R*¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

*R*², *R*³, *R*⁴, *R*⁵, *R*⁶, *R*⁷, *R*⁸, *R*⁹, *R*¹⁰, *R*¹¹, *R*¹², *R*¹³, *R*¹⁴, *R*¹⁵, *R*¹⁶, *R*¹⁷, *R*¹⁸, *R*¹⁹, *R*²⁰, *R*²¹, *R*²² and *R*²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

*R*¹ and *R*², *R*³ and *R*⁴, *R*⁵ and *R*⁶, *R*⁷ and *R*⁸ and *R*⁹ and *R*¹⁰ and *R*¹¹ and *R*¹² and *R*¹³ and *R*¹⁴ and *R*¹⁵ and *R*¹⁶ and *R*¹⁷ and *R*¹⁸, *R*¹⁹ = *CR*¹⁵*R*¹⁶, *R*¹⁵*R*¹⁶ = *CR*¹⁵*R*¹⁶*O* or *CR*¹⁵*R*¹⁶*NR*¹⁷.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^6R^9, B = O, E = S, D = CR^{20}R^{21}.$$

*R*¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S).

*R*², *R*³, *R*⁴, *R*⁵, *R*⁶, *R*⁷, *R*⁸, *R*⁹, *R*¹⁰, *R*¹¹, *R*¹², *R*¹³, *R*¹⁴, *R*¹⁵, *R*¹⁶, *R*¹⁷, *R*¹⁸, *R*¹⁹, *R*²⁰, *R*²¹, *R*²² and *R*²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

5

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^9R^9$, $B = NR^{10}$, $E = S$, $D = CR^{21}R^{22}$;

10

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

15

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25

$A = CR^9R^9$, $B = CR^{20}R^{21}$, $E = S$, $D = CR^{24}R^{25}$;

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^3R^9, B = S, E = S, D = CR^{20}R^{21}.$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^{18}R^{19}, B = O, C = CR^{20}R^{21}, D = CR^{24}R^{25}.$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

15 In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^6R^9, B = NR^{10}, E = CR^{21}R^{22}, D = CR^{24}R^{25},$$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

30 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = CR^{20}R^{21}, E = CR^{24}R^{25}, D = CR^{26}R^{27},$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2, R^3 and R^4, R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = S, E = CR^{21}R^{22}, D = CR^{24}R^{25},$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl,

carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^8R^9$, $B = O$, $E = NR^{10}$, $D = CR^{21}R^{22}$;

10 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

15 R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

20 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

25 $A = CR^8R^9$, $B = NR^{10}$, $E = NR^{23}$, $D = CR^{21}R^{22}$;

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S).

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} and R^{15} and R^{16} and R^{17} and R^{18} and R^{19} and R^{20} and R^{21} and R^{22} and R^{23} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^8R^9$, $B = CR^{21}R^{22}$, $E = NR^{10}$, $D = CR^{24}R^{23}$;

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^3 and R^4 , R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} and R^{11} and R^{12} and R^{13} and R^{14} and R^{15} and R^{16} and R^{17} and R^{18} and R^{19} and R^{20} and R^{21} and R^{22} and R^{23} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

In another sub-embodiment, a structure of the formula (III) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^8R^9$, $B = S$, $E = NR^{10}$, $D = CR^{21}R^{22}$;

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{12} ($X = O, NR^{14}$ or S).

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

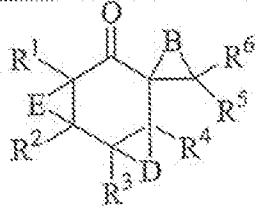
R^1 and R^2, R^3 and R^4, R^5 and R^6 and R^7 and R^8 and R^9 and R^{10} can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$.

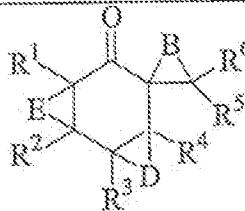
15

In a particular embodiment of the present invention, the compounds of the formula (III) are the following species:

(III)

B	D	E	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶
O	O	O	Me	H	H	H	Me	Me
O	O	O	<i>i</i> -Pr	H	H	H	Me	Me
O	O	O	Ph	H	H	H	Me	Me
O	O	O	Me	Me	H	H	Me	Me
O	O	O	<i>i</i> -Pr	Me	H	H	Me	Me

 (III)									
B	D	E	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	
O	O	O	Pb	Me	H	H	Me	Me	
O	O	O	Me	H	Me	H	Me	Me	
O	O	O	<i>i</i> -Pr	H	Me	H	Me	Me	
O	O	O	Ph	H	Me	H	Me	Me	
O	O	O	Me	H	H	Me	Me	Me	
O	O	O	<i>i</i> -Pr	H	H	Me	Me	Me	
O	O	O	Ph	H	H	Me	Me	Me	
O	O	O	Me	H	CH ₂ Ph	H	Me	Me	
O	O	O	<i>i</i> -Pr	H	CH ₂ Ph	H	Me	Me	
O	O	O	Ph	H	CH ₂ Ph	H	Me	Me	
CH ₂	O	O	Me	H	H	H	Me	Me	
CH ₂	O	O	<i>i</i> -Pr	H	H	H	Me	Me	
CH ₂	O	O	Ph	H	H	H	Me	Me	
CH ₂	O	O	Me	Me	H	H	Me	Me	
CH ₂	O	O	<i>i</i> -Pr	Me	H	H	Me	Me	
CH ₂	O	O	Ph	Me	H	H	Me	Me	
CH ₂	O	O	Me	H	Me	H	Me	Me	
CH ₂	O	O	<i>i</i> -Pr	H	Me	H	Me	Me	
CH ₂	O	O	Ph	H	Me	H	Me	Me	

 (III)									
B	D	E	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	
CH ₂	O	O	Me	H	H	Me	Me	Me	
CH ₂	O	O	i-Pr	H	H	Me	Me	Me	
CH ₂	O	O	Ph	H	H	Me	Me	Me	
CH ₂	O	O	Me	H	CH ₂ Ph	H	Me	Me	
CH ₂	O	O	i-Pr	H	CH ₂ Ph	H	Me	Me	
CH ₂	O	O	Ph	H	CH ₂ Ph	H	Me	Me	
CH ₂	CH ₂	O	Ph	H	CH ₂ Ph	H	Me	Me	
CH ₂	CH ₂	O	Me	H	H	H	Me	Me	
CH ₂	CH ₂	O	i-Pr	H	H	H	Me	Me	
CH ₂	CH ₂	O	Ph	H	H	H	Me	Me	
CH ₂	CH ₂	O	Me	Me	H	H	Me	Me	
CH ₂	CH ₂	O	i-Pr	Me	H	H	Me	Me	
CH ₂	CH ₂	O	Ph	Me	H	H	Me	Me	
CH ₂	CH ₂	O	Me	H	Me	H	Me	Me	
CH ₂	CH ₂	O	i-Pr	H	Me	H	Me	Me	
CH ₂	CH ₂	O	Ph	H	Me	H	Me	Me	
CH ₂	CH ₂	O	Me	H	H	Me	Me	Me	
CH ₂	CH ₂	O	i-Pr	H	H	Me	Me	Me	
CH ₂	CH ₂	O	Ph	H	H	Me	Me	Me	

 (III)									
B	D	E	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷
CH ₂	CH ₂	O	Me	H	CH ₂ Ph	H	Me	Me	
CH ₂	CH ₂	O	i-Pr	H	CH ₂ Ph	H	Me	Me	
CH ₂	CH ₂	O	Ph	H	CH ₂ Ph	H	Me	Me	
CH ₂	O	CH ₂	Me	H	H	H	Me	Me	
CH ₂	O	CH ₂	i-Pr	H	H	H	Me	Me	
CH ₂	O	CH ₂	Ph	H	H	H	Me	Me	
CH ₂	O	CH ₂	Me	Me	H	H	Me	Me	
CH ₂	O	CH ₂	i-Pr	Me	H	H	Me	Me	
CH ₂	O	CH ₂	Ph	Me	H	H	Me	Me	
CH ₂	O	CH ₂	Me	H	Me	H	Me	Me	
CH ₂	O	CH ₂	i-Pr	H	Me	H	Me	Me	
CH ₂	O	CH ₂	Ph	H	Me	H	Me	Me	
CH ₂	O	CH ₂	Me	H	H	Me	Me	Me	
CH ₂	O	CH ₂	i-Pr	H	H	Me	Me	Me	
CH ₂	O	CH ₂	Ph	H	H	Me	Me	Me	
CH ₂	O	CH ₂	Me	H	CH ₂ Ph	H	Me	Me	
CH ₂	O	CH ₂	i-Pr	H	CH ₂ Ph	H	Me	Me	
CH ₂	O	CH ₂	Ph	H	CH ₂ Ph	H	Me	Me	

In a sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

20 A is O, S or NR⁷;

25 B and E are independently selected from CR⁸R⁹, O, S or NR¹⁰;

30 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR⁷ (X = O, NR⁸ or S);

35 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶ and R¹⁷ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

40 R¹ and R², R² and R³, R³ and R⁴, R⁴ and R⁵ and R⁵ and R⁶ can also each be comprised of one or two CR¹²R¹³ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

45 and

50 the dotted line indicates the presence of either a single or double bond, wherein the presence of a single bond, the valences are completed by hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

55 A = O, B = O, E = O;

60 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O$, NR^{12} or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{16}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = Q, B = NR^{10}, E = O;$$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

20 $R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or
25 XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{13}R^{16}$, $CR^{16}R^{16}$, $CR^{17}R^{18}$, $CR^{18}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5 A = O, B = CR⁸R⁹, E = O;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

10 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alknyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

15 R¹ and R², R³ and R⁴, R⁵ and R⁶ and R⁷ and R⁸ and R⁹ and R¹⁰ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

20 the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = S, E = O;

25 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

30 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl,

alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

10 the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = O, E = S$;

15 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

20 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

25 R^1 and R^2 , R^3 and R^4 , R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = NR¹⁰, E = S;

5 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

10 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, 15 sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

15 R¹ and R², R² and R³, R³ and R⁴, R⁴ and R⁵ and R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20 In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = CR⁸R⁹, E = S;

25 R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

30 R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide,

phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

5 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

10 In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = S, E = S;$

15 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

20 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

25 R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

30 In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O; B = O, E = CR^9R^9;$

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

5 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

10 R^1 and R^2, R^2 and R^3, R^3 and R^4, R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$;

15 the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = NR^{10}, E = CR^7R^8;$

20 R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

25 $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$
 R^{22} and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R¹ and R², R³ and R⁴, R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = CR⁸R⁹, E = CR²¹R²²;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

20

R¹ and R², R³ and R⁴, R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = S, E = CR⁸R⁹;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^6 can also each be comprised of one or two $CR^{13}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = O, E = NR^{10}$;

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R¹ and R², R³ and R⁴, R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = NR¹⁰, E = NR²³;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹³ (X = O, NR¹⁴ or S);

R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

15

R¹ and R², R³ and R⁴, R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O, B = CR⁸R⁹, E = NR¹⁰;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkanyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R^1 and R^2 , R^2 and R^3 , R^3 and R^4 , R^4 and R^5 and R^5 and R^6 can also each be comprised of one or two $CR^{15}R^{14}$ groups, connected by a tether, independently selected from $CR^{15}R^{16}$, $CR^{15}R^{16}CR^{17}R^{18}$, $CR^{15}=CR^{16}$, $CR^{15}R^{16}O$ or $CR^{15}R^{16}NR^{17}$,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = O, B = S, E = NR^{16}$,

R^1 is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{13} ($X = O, NR^{14}$ or S);

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$ and R^{23} independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR^{11} ($X = O, NR^{12}$ or S);

R¹ and R², R² and R³, R³ and R⁴, R⁴ and R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = O; B = O, E = O;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹⁴ or S);

10

R², R³, R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹, R¹², R¹³, R¹⁴, R¹⁵, R¹⁶, R¹⁷, R¹⁸, R¹⁹, R²⁰, R²¹, R²² and R²³ independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR¹¹ (X = O, NR¹² or S);

15

R¹ and R², R² and R³, R³ and R⁴, R⁴ and R⁵ and R⁶ can also each be comprised of one or two CR¹³R¹⁴ groups, connected by a tether, independently selected from CR¹⁵R¹⁶, CR¹⁵R¹⁶CR¹⁷R¹⁸, CR¹⁵=CR¹⁶, CR¹⁵R¹⁶O or CR¹⁵R¹⁶NR¹⁷;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR⁸R⁹; B = O, E = O;

R¹ is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,